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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,254	09/17/2001	Gene E. Lightner		1186

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Gene E. Lightner
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Federal Way, WA 98023

EXAMINER

HAILEY, PATRICIA L

ART UNIT	PAPER NUMBER
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1755

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DATE MAILED: 04/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/955,254

Applicant(s)

LIGHTNER, GENE E.

Examiner

Patricia L. Hailey

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Specification

1. The disclosure is objected to because of the following informalities:

On page 6 of the Specification, Example 2 is incomplete. The last sentence of this Example reads: "After a prolonged time, the glucose did not". It is respectfully suggested that Example 2 be deleted from the Specification, since an attempt to complete Example 2 may result in a rejection and/or objection based on the insertion of new matter.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4, 5, 10, 12, 16, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 5 are indefinite because the Markush groups recited therein are in improper form. It is suggested that these claims be amended to recite the phrase "selected from the group consisting of wood, paper, lignocellulose materials, and mixtures thereof" (claim 4) or "selected from the group consisting of glucose, pentose sugars, and mixtures thereof" (claim 5).

Claims 10, 12, 16, and 17 all lack antecedent basis. Claims 10 and 16 lack antecedent basis for the phrase "filtered residue", claim 12 lacks antecedent basis for the phrase "aqueous solution", and claim 17 lacks antecedent basis for the phrase "extractate".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-12, 15, and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Clausen et al. (U. S. Patent No. 5,188,673), Applicants' submitted art.

Clausen et al. teach a method of converting lignocellulosic materials to sugars. The method involves mixing the lignocellulosic material with sulfuric acid (acid concentration of 30 percent or greater), allowing the reaction to proceed at 100°C or less (considered to be a hydrolysis process), and separating the sulfuric acid and sugars (consisting of glucose and xylose) from the reaction product. See col. 2, line 42 to col. 3, line 18 of Clausen et al., as well as col. 4, line 31 to col. 5, line 61.

The sulfuric acid and sugars may be subjected to acid recovery or neutralization to isolate the sulfuric acid and the sugars; the sugars may be subjected to fermentation to chemicals or energy forms such as alcohols, methane, etc., and the acid may be recovered for reuse. See col. 5, lines 5-24 of Clausen et al., which also discloses the process steps of recycling a portion of the acid-sugar solution into the hydrolysis reactor to maximize the concentration of sugars in the sugar-acid solution.

In view of the above teachings, Clausen et al. anticipate claims 1-12, 15, 17, and 19.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 13, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Clausen et al. (U. S. Patent No. 5,188,673), Applicant's submitted art, in view of Brink (U. S. Patent No. 5,366,558).

Clausen et al. is relied upon for the teachings discussed in the above 102(b) rejection. Clausen et al. do not teach or suggest the limitations of claims 13 and 14. Claim 16 recites the same limitation as claim 10, which has been rejected under 102(b) as set forth above. However, because claim 16 depends from claim 14, it is included in this rejection.

Clausen et al. teach the process steps of neutralizing sulfuric acid and sugars, as stated in the above 102(b) rejection. See also col. 5, lines 8-11 of Clausen et al.

Brink is relied upon to teach the conventionality in neutralizing hydrolysate produced via hydrolysis of lignocellulosic material, which can be performed with calcium hydroxide (a "base") and ammonia (which is added to promote fermentation). See col. 6, lines 21-30 of Brink.

In view of the teachings of Brink, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have performed the post-hydrolysis neutralization steps disclosed in Clausen et al. with components such as calcium hydroxide and ammonia. "The use of conventional materials to perform their known functions in a conventional process is obvious." *In re Raner*, 134 U.S.P.Q. 343 (CCPA 1962).

Further, because both references are directed to processes of hydrolyzing lignocellulosic materials, motivation to combine the teachings of these references is deemed proper.

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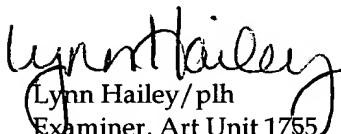
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Hailey whose telephone number is (703) 308-3317. The examiner can normally be reached on Mondays-Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Bell can be reached on (703) 308-3823. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0661.


Lynn Hailey/plh
Examiner, Art Unit 1755
April 16, 2003


Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700